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ABSTRACT

This paper briefly discusses the effects of home environment, parenting, family configuration (number spacing of children) and nutrition on young children's mental development and subsequent school success. Variety and richness of home stimulation are identified as crucial to the child's later academic success. The quality of mothering and fathering and the effectiveness of the one-parent family are discussed in terms of the child's language development, acquisition of social skills, and physical well being. Family configuration and the resulting amount of attention received by each child are reported to be important in influencing the child's intellectual development and academic achievement. Research is cited to indicate that early malnutrition has lasting effects on children's motor and adaptive behavior, language and personality. In conclusion, it is suggested that parent education is the most feasible way of meeting the needs of all children, and several model programs of parent education are identified. (CM)

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FAMILIAL FACTORS:

A critical dimension of early identification.

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INTRODUCTION

In the last decade nearly every line of social and psychological research points to the family as the foremost influence in determining a child's success in school. In study after study from the impressive investigations of the head-line making works of Bloom (1976), Coleman (1972) and Jencks (1972) to the lesser known but significant findings of early childhood intervention projects, the home and the community have been identified as vital factors in students' school success. Coleman's study of some 600,000 children concluded it was not so much the school but the students' family life and the conditions undergirding a strong life within the family that determined school performance.

Moreover there is now major evidence that the optimum time for many kinds of learning and for the stimulation of basic learning abilities in a child is already past before he ever arrives in school. It is self-evident that children are learning long before they enter our educational system. Indeed Burton White (1977) claims that relatively few children regardless of type of family get as much out of education during their first years as they might. He states that although serious educational deficits are not usually seen before eighteen months that these can often be reliably detected at three years of age and nearly always well before grade 1. What is even more tragic given these facts is that poor results or failures to learn in the first three years are extremely difficult to correct whether we think in terms of such intervention efforts as Headstart and Follow Through or more costly tutoring for those who can

afford it. For White the critical and definitive years are from zero to three years when parents or their surrogates are the prime caretakers and teachers of the child.

To be really effective identification of and screening for high risk children must begin from the child's earliest years and include the family situation.

HOME ENVIRONMENT

Which aspects then of the home, which dimensions of parenting influence and foster a child's mental development and capacity? What dimensions determine whether each child receives that sense of love, support, confidence, self-worth, motivation and self-respect which are so important to school success. Several researchers have been involved for some time now in observing and studying children right from birth as well as interviewing parents in homes of all socio-economic levels. By focussing on how parents interact with their children research seems to be closing in on crucial elements that appear to yield the individual differences in mental capacity so frequently noted when children arrive in school. We now have a body of literature from a variety of places aroung the world concerning the relationship between a child's home environment and achievement in school. Findings transcend nationality and social class for the quality of the home environment depends upon the kind of interactions that take place between parents and children and good parental practices can be found among parents of all socio-economic levels and in all ethnic groups. Nevertheless social pressures of unemployment, inflation, family break-ups and many other forms of disadvantage tend to tip the scales heavily against a quality home learning situation.

Elardo, Bradley and Caldwell (1975), who tested children at six months and again at three years report among other factors that the two main elements which differentiated between scores on the Stanford-Binet were opportunities for variety in stimulation and the organizational arrangement of the home environment. From the mid-sixties Deutsch (1971) has also associated homes with little color, few pictures and books, cluttered, noisy and crowded homes with poor school achievement. In their work with infants, Wachs, Uzgiris and Hunt (1971) reported one very positive and one very negative characteristic of the home which correlated significantly with achievement at age six. The former was the presence and availability of magazines to the child at nine months and the latter was a high noise level. It seems that just having magazines around where children coud feel, touch, taste and smell them -- whether indicative of other features of the home might also be questioned -- made a difference. Other investigations (e.g. Deutsch, 1971) tend to confirm that excessive noise interferes with the child's perceptual development. Conflicting disorganized stimuli confuse the child and inhibit him from developing the capacity to utilize cues, to extract reliable information whereby he may acquire a sense of trust and power in his own perceptions of reality and his own capacity to act on his environment.

Gordon (1974) and his co-workers found that the most important provision of the home situation was out of home experiences -- car rides, trips to the supermarket, zoo, beach, library. Variety and richness of home stimulation in a qualitative sense seems to be a crucial element. Children need predictability in order to build up cognitive operating systems. They need a sense of order and consistency. The need to know that behaviors allowed today will not be punished tomorrow, that behavior approved by Mom is

also approved by Dad. In this way, through hundreds and thousands of little interactions they construct a view of themselves and their world, and condition the mental capacity that will eventually cope with the school situation.

QUALITY PARENTING

Children need responsive caretakers. Schaefer (1969) pointed out that hostile, non-involved mothers could not only be found but were also not very effective in helping their children to grow. Ainsworth and Bell (1974) who studied disadvantaged parents found that 43 per cent were not responsive to cues given by their toddlers. Parents today are spending less and less time working, playing, reading and talking to their children. Indeed it is now known that most preschoolers watch television for fifty hours a week and spend many more with passive, uninterested sitters. More and more children come home to an empty house or apartment. Gone increasingly are family picnics, mealtime chit-chat, casual and informal visiting, and children and parents working together fixing the home, preparing meals, hiking, singing and playing together. Parental priorities are encroaching more and more on the time spent in meaningful activities with children. The role of motherhood traditionally unacknowledged is now downgraded and demeaned in the current emphasis on female self-fulfillment. Parental encouragement of language and intellectual activities, of self-control and independence, of curiosity with regard to school-oriented tasks, factors consistently related to high verbal and reasoning school scores are not rewarded in many family settings. Parenting is not automatically acquired with the birth of an infant; it must be learned and deserves to be worked at, more than any other skill if we are to do justice to our children.

Mothering

Bronfenbrenner (1975) in summing up the results of experimental

early-learning programs — many of them home-based — concluded that " unless the child's mother becomes involved in helping the youngster learn, that gains tend to be only temporary." Indeed, Bradley and Caldwell who are working with low-income families in Little Rock maintain that the quality of the mother's involvement with the child is much more related to mental development than to socio-economic level. Heber et al. (1972) whose longitudinal study of the children of forty retarded mothers is by far the most significant study of its kind to date, supports this viewpoint. These children were monitored from birth. Special educators began developmental instruction with the children and their mothers when they reached the age of three months, and continued until the child reached two years of age. Then the children were tutored in small groups in which mothers were also involved until they entered regular public schools. The mean I.Q. of the experimental children was 124 as opposed to 94 for controls at time of report. This is not the kind of mothering that can be compressed into a tired couple of hours after a full day's work, which is what is becoming more and more common as the number of working mothers increases. In the United States, one out of every three mothers (33%) with preschool children (6 million) is working today compared to one in eight in 1948. In fact, the increase of women in the working force is one of the most significant facts of our time and it is having a major impact on child-rearing.

The concept of quality mothering is complex in itself, but various avenues of research are beginning to tease out a number of elements that appear to make a difference in terms of the child's intellectual development. White (1975) identifies four fundamental areas that all children cope with before their third birthday -- these are language, curiosity, social skills and the foundations of intelligence. Although interrelated probably language at this age is the most critical of all. Much has been

written about the importance of family-child verbal interactions. Indeed, if we accept White's claim that most children, by the time they are three years old have the capacity to understand most of the language they'll use in ordinary conversation for the rest of their lives, then this aspect of family life cannot be over-emphasized. Language basically evolves through the labelling of the child's environment, through practice in discriminating visual and auditory stimuli, through opportunities to categorize and to classify various concepts of size, form, and sounds, through infinite practice in verbal experiences with individuals who are verbally more mature than the child.

The verbal resourcefulness of different mothers is exemplified in the now classic dialogue reported by Bernstein (1971) as two different mothers try to stress the reasons for putting away blocks.

CASE 1.	CASE 2.
Mother: Put away your blocks.	Mother: Put away your blocks darling.
Child: Why?	Child: Why?
Mother: Put them away.	Mother: You have finished playing with them.
Child: Why?	Child: Why?
Mother: They mess up the house.	Mother: We should learn to put away our toys when we are finished using them. If the toys are left on the floor the house will look untidy.
Child: Why?	Child: Why?
Mother: I told you to put them away didn't I.	Mother: Now put the blocks away darling, and don't make such a fuss.

In Case 1 the child is not given a full explanation of why he should remove his toys nor does he receive corrective and reinforcing feedback. Eventually he may stop asking "Why?". In Case 2 the child learns that blocks are toys, he hears more words and elaborated sentences; he engages in reasoning and concepts of causality; he is learning responsibility and self-discipline and the mother attempts to satisfy his curiosity by being less authoritative using "we" instead of the "I" of the first mother. The child who has a verbally impoverished home environment where opportunities to question are limited is likely to develop what Bernstein calls "public language" which lacks the verbal power and does not reflect the cognitive coping strategies typically needed to master the demands of schooling.

Fathering

The presence or absence of the father in the home or what Elkind and Weiner (1978) prefer to call, and probably more correctly so, inadequate fathering, likewise has implications for how well a child's intellectual capacity develops. According to these authors, father's absence has a greater impact on the preschooler than on the older child. They claim that preschoolers adjust more easily to a father's death, hospitalization or extended absence than to desertion, separation or divorce. Even these findings are qualified and dependent on the solidarity and happiness of the marriage as well as the presence of an extended family or other community support. In their view, the effects of further absence are largely mediated through the attitudes, behaviors and personality of the mother. However, the presence of a father is no guarantee of quality fathering either. Middle class fathers who claimed they spent on the average twenty minutes a day with their one

-year olds actually registered only thirty-eight seconds of meaningful interactions when monitored by microphones on their children. Demands of jobs which claim evenings and weekends, increased community obligations, more entertaining outside the home, have all contributed to fathers being away more and more from their children. In suburbia, quite often the only men children see during the day are the postman and the milkman. Biller (1978) who is accumulating data to show that children profit from close relationships with fathers very early in their lives claims that we have to educate men to realize the important impact they have on their children.

One Parent-Family

The question of father absence is becoming more and more serious because of the continuing rise in divorce and separation rates as well as the decrease in the extended family. In the past twenty-five years the number of adult relatives in the home has dropped by half whereas the number of children living with one parent has doubled. As Margaret Mead (1969) points out we now expect a family, much less the single parent, to achieve alone what no other society has ever expected an individual family to accomplish unaided. In effect today we call upon an individual family to do more than what a whole clan used to do in former times.

Some eighteen million children (i.e. 1 in 7) in the United States now live in one parent families and 13 per cent of all infants under three have only one parent. Ferri (1976) compared 750 British one parent children with 12,000 two parent children and found they were behind in achievement, less well adjusted and as might be expected suffered greater disadvantage

in terms of adequate housing, low socio-economic status and above all poverty. Basic conditions for good health — adequate nourishment, ongoing medical care and attention, appropriate clothing, personal cleaniness and hygiene -- were lacking for many children. Most single parents live with tremendous pressures and stress — the practical problems of low income, of poor housing,of going out to work as well as caring for children, the emotional strains of bereavement or marriage breakdown exacerberated by feelings of isolation and social rejection -- all compound to limit their abilities to provide adequate parenting in many areas. Indeed most severe child injuries occur in single parent homes,many by frazzled mothers, who are taxed beyond their capacities to cope. In fact child abuse by parents is now a national problem in the U.S. During 1970 two million battered child cases were treated not to mention the 200,000 infants and children a year who are being killed many through parental neglect. (Bronfenbrenner 1975)

FAMILY CONFIGURATION

Since children share family resources of intellectual stimulation as well as material assets, in general,the amount of parental attention received by each child decreases as the number of children in the family increases. White, based on his Harvard Preschool Project data, advises parents to try not to have children closer than three years apart. He documents this recommendation with anecdotes of the inevitable resentments, dislikes and hostile behaviors observed when siblings of nine and twenty-

one months share and compete for maternal care and attention in the home environment. Empirical studies have consistently reported a negative correlation between the number of children in a family and intelligence test scores. Walberg and Marjoribanks (1976) note that not until sibsize increased beyound two in families of low socio-economic status does sibsize seem to have a deleterious influence on verbal ability. These researchers reported that whereas there was no effect of sibsize on ability in professional or managerial homes an estimated difference of forty IQ points was observed between single borns and six-child families of unskilled workers.

Research findings with repect to birth order are less precise althougn the data tends to suggest that earlier born children have a slight intellectual advantage and score higher on academic achievement. Incidentally nearly all, twenty-one out of twenty-three, American astronauts who went to the moon were first borns. It is believed that parental expectations and assignment of responsibility are greater for first born than for later born children. However the exclusive relationships which the first born has with a good parent cannot be ignored.

NUTRITION

Poverty and its many ugly forms undoubtedly are major factors contributing more than all others to conditions which results in child underdevelopment. Not only is poverty a key cause of inadequate parenting and often influences home environment but its close link with malnutrition as well as physical and neurological health makes it still more invidious. As early as conception a malnourished or diseased mother can pass on her

deficiencies in one or more forms to her unborn child -- indeed the brain is one of the organs most affected by malnutirion during pregnancy. Furthermore it is now established that during certain preiods of rapid growth the organism is particularly vulnerable to nutritional injury. Neurophysiologists (Dobbing & Sands, 1975) claim that five-sixths of the growth spurt in the brain comes after birth-- with the growth of the brain packing cells and the myelin lining of the long nerve fibers which carry the nerve messages -- and continues until about the time the child is two years old. Moreover generation of the nerve cells as well as the growth spurt of the cerebellum, which controls balance and movement of the arms and legs is also delayed till late in pregnancy and after birth. It seems that inadequate nutrition during these periods may result in lasting damage as well as in clumsiness and reduced manual skills. Cragg (1975) in Australia made a meticulous microscopic investigation of the cerebral cortex of rats, malnourished early in life, which indicated they had forty percent less branching of the nerve fiber endings -- compared to normal rats. (Hertig et al, 1972).

From sudies of malnourished infants in Mexico (eg. Cravioto & Robies, 1965) and in South Africa (Hertig et al, 1972) it appears that children suffering malnutrition before the age of six months tend to suffer lasting effects when assessed for motor behavior, adaptive behavior, language and personality. Graham and his co-workers (1966) stated:

> "The younger the child at the onset of malnutrition, the more severe will be the growth deficit and the less likely will the child be able to make it up over the years".

Lenneberg (1975) also believes that there are critical periods of language acquisition related to brain growth. Poor nutrition has other ill effects, for malnourished children are more susceptible to all kinds of infection,

which can produce permanent defects in hearing, sight and motor functions.

Nutritional problems are most severe among the poor, however many children of more well-to-do families are allowed to subsist on potato chips, candy bars and pop. The problem of overnourishment with its own particular syndrome of physical and psychological drawbacks and concomitant poor school achievement, is now finding its roots in infant and child eating habits. Considering one of every five American children is now classified as over-nourished, the question of family nutrition deserves solid attention. In fact, we are just beginning to appreciate the full importance of nutrition in human growth and development. It does not seem impossible that individual differences in intellectual capacity may very well be mediated by nutritional factors.

CONCLUDING REMARKS

How can we translate the mounting research on the importance of the home and parenting on children's mental development and subsequent school success into practical action? The answer seems to be parent education, for the most feasible way of meeting the needs of all children is to ensure that all parents acquire expertise in parenting. White (1977) stated that the three main obstacles parents face in trying to do their best for children are ignorance, stress and lack of assistance. His insistence that parenting must be taught is backed by several excellent suggestions as to how to go about this. He recommends that courses in educational development be required in highschools, that parents of new-born children be exposed to minicourses, videocassettes and films during the lying-in period in hospitals, that adult education courses for pregnant mothers and their husbands be made available. Televised talks and courses could also appear as a

regular weekly feature. Low cost -- free for certain income groups -- early and regular educational screening seems also a must. There is probably a need for a new type of professional -- the parent educator -- who can teach parents how to educate their children, but whose status will be acknowledged on a basis other than an "intervention" rationale. Such professionals could work out of neighbourhood resource centers, which should become less crisis oriented and more community conscious and informed about individual families in their areas.

Some districts or consortia -- usually a university, school district and community agency -- have already made fine beginnings, but most attention, expertise and available money has been concentrated on poverty areas and rightly so. Programmes such as Heber's Milwaukee Project, Caldwell's Little Rock Kramer School Model, and the pioneering work of Gray and Klaus in Nashville, have developed ways to reach the child as an infant and to provide him with home instruction through teaching the parents specific ways of playing and interacting with him. Researchers are studying different approaches to getting parents to participate and to become involved -- for example, child-centered vs. parent-centered programmes, the use of indigenous paraprofessionals, the availability of 'materials' libraries -- which should provide insights into what kinds of help and services are most likely to be effective. A few experimental programmes such as the Brookline Early Education Project offer all parents of young children in the community access to community Early Learning centers, classes for parents, learning toys and the expertise of early childhood educators regardless of income. This type of programme is an extremely good model for future

tax-supported extensions of public schooling, where all parents can have expert personal guidance in providing an optimum environment for their children's mental development.

Parents are the child's first, and should be his best teachers. They are a powerful and potent force in a child's development - mental, physical, social and emotional. It is now clear that there are no practical alternatives to involving parents in providing the kinds of home life and stimulating experiences that encourage a child's mind to grow. Furthermore, since the need of positive early experiences is more desirable, more effective, more humane, and more economical than remediation procedures, educators have little choice but to advocate and to establish working relationships with parents. Identification at the age of four of children at risk is at most only second best. Educators and government must find the ways and means to ally themselves with parents in such a manner that all will want as well as know how to provide the concerned attention and loving responsiveness which the educational development of their children demands.

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